Attorney Docket No. 566/42765
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thomas Wagner et al.		
Serial No.:	10/509,947	Art Unit:	3683
Filed:	June 23, 2005	Examiner:	Christopher P. Schwartz
For:	METHOD AND DEVICE FOR CONTROLLING AN ELECTRICALLY ACTUATED WEAR ADJUSTER		

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to Official Office Action dated December 7, 2007, Applicants request reconsideration of the rejection of claims 1-20 as unpatentable under 35 U.S.C. 103 over Wolfsteiner et al. '477 in view of Bohm et al. '694 or Blattert '729. Applicant appreciates the informative interview of February 21, 2008.

Thus, even though there is no valid rejection, Applicant provides the following comments to advance the prosecution.

Claim 1 is directed to a method of controlling an electrically actuated wear adjusting device of a brake application system for vehicles. It includes the steps of :

a) determining an actual application stroke of brake pads from a release position to an application point onto an assigned brake disc or brake drum during a service braking having a covered application path from release to a service braking position as a function of a measured braking force value assigned to this covered application path,

b) comparing the actual application stroke with a desired application or a desired-application stroke tolerance range and, if the actual application stroke deviates there from, computing an adjusting path from the deviation, and

c) electronically controlling the wear adjusting device as a function of the computed adjusting path to reestablish the desired application stroke or tolerance range.

Claim 9 is a method including the steps of: a) operating the brake application system until the brake pads have reached a defined desired application point or a desired application point tolerance range; b) electrically actuating the wear adjusting device until a measured electric braking force signal is present for the first time; and c) restoring the brake application system to a release position from the position the of step b.

Claim 11 is a device for controlling an electrically actuated wear adjusting device of a brake application system for vehicles and includes:

a) sensors for measuring at least an application path from a release position to a service braking application position covered by brake pads and a braking force value assigned to this application path during a service braking and for generating corresponding output signals,

b) means for determining an actual application stroke from the release position to an application point of the brake pads to an assigned brake disc or brake drum as a function of the output signals,

c) means for comparing the actual application stroke with a desired application stroke or a desired application stroke tolerance range and for calculating an adjusting path from the deviation, and

d) means for controlling the wear adjusting device as a function of the calculated adjusting path to reestablish the desired application stroke or tolerance range.

Claims 1 and 11 have been amended to clarify the difference between "application path", application point" and "application stroke". An appendix to the present amendment illustrates the differences. The application stroke is from release to the application point. The application point is the point where the brake pads contact the brake disc with zero force. The application path is path covered by the brake pads from release to a service braking position.

As recognized by the rejection, Wolfsteiner et al. '477 does not specifically describe how the wear adjusting process works and therefore cites Bohm et al. '694 and Blattert '729.

The present claims specifically require measurement of force and the use of the force information in making the wear adjustment. Bohm et al. '694 does not use force measurements. Matter of fact it teaches away from using force measurements. It states that force sensors are inaccurate and "therefore, an object of the present invention is to provide a controlling or adjusting system which permits adjustment of a clearance even without the use of a force sensor." column 1, lines 63-65. Thus, there is no obvious combination of Wolfsteiner et al. '477 and Bohm et al. '694 which would not meet the limitations of the present claims.

In contrast to Bohm et al. '694, Blattert '729 does discuss using force measurements F(t) in setting the air gaps S_0, S_1, and S_{ERW} . There are three suggested methods of setting the air gap in the paragraph starting on line 25 of column 3:

> a) in column 3, lines 26 to 34, the first embodiment an angle or position control system where the actual position of the brake linings is detected and set to a reference position. But there are no details about how the position control system is realised.
>
> b) in column 3, lines 34 to 38, the second embodiment senses the release of the wheel brake and sets a predefined air gap by activating the position motor on the basis of the zero value which is then present. But it is not said, how the predefined air gap can be maintained, as the clearance between the brake linings and the brake disc will increase depending upon wear and the air gap is calculated from the release point of the brake.
>
> c) in column 3, lines 38 to 50, third embodiment uses a given characteristic curve corresponding to the correlation between the braking force and the displacement of the brake lining to calculate an actual brake force. In a status, where the displacement of the lining is zero (contact between the brake linings and the brake disc), the actual brake force is measured. But it is not clear how the air gap is set depending upon the measured actual brake force.

Consequently, Blattert '729 does not specifically and clearly teach the wear adjustment methods and apparatus of the present claims.

Even if it were obvious to combine Wolfsteiner et al. '477 with Bohm et al. '694 or Blattert '729, they do not meet the limitations of the claims. With respect to claim 1, they do not teach comparing the actual application stroke with a desired application stroke or a desired-application stroke tolerance range and, if the actual application stroke deviates therefrom, computing an adjusting path from the deviation. With respect to claim 9, they do not teach electrically actuating the wear adjusting device until a measured electric braking force signal is present for the first time. With respect to claim 11, they do not teach plural sensors for measuring at least an application path covered by brake pads and a braking force value assigned to this application path during a service braking and using the generated signals to determine the actual application stroke.

Claims 19 and 20 have been rewritten as independent claims. The specific implementation of claim 1 is not described by nor obvious in view of the applied references.

Thus the claims are allowable and the passage of the application to issue is hereby requested.

It is respectfully requested that, if necessary to effect a timely response, this paper be considered as a Petition for an Extension of Time sufficient to effect a timely response and shortages in other fees, be charged, or any overpayment in fees be credited, to the Account of Barnes & Thornburg LLP, Deposit Account No. 02-1010 (566/42765).

Respectfully submitted,

BARNES & THORNBURG LLP

Perry Palan
Reg. No. 26,213
(202) 289-1313